

DARTMOUTH COLLEGE

MAY 1909

THE CHRONICLE

Early American Industries

VOLUME 14, No. 1

JULY, 1944

Dried Applesauce

By CHARLES LARNED ROBINSON

The apple was a more important part of our diet 100 years or more ago than it is today. Every farmer had his quota of apple trees which are now dead, their ghosts or stumps mingled with growing timber on abandoned farms. The preparation of the winter's supply of dried apples was one of the annual fall chores, like husking corn. It was usually done in the kitchen by the women folks with now and then a paring bee to provide a social evening, and a supply of sweet and hard cider to help things along. Women's deft and nimble fingers made quick work of the paring but there were men, too, bachelors, widowers and others, who had to provide themselves with winter rations of dried apples. With fingers too clumsy and stiffened by heavy farm work to accomplish quick results with a paring knife and a slippery apple, they put their wits to work to find an easier method. The first thought was some arrangement to turn the apple with one hand against a knife held in the other. This required merely a shaft of wood or iron with a fork on one end and a crank on the other. The next step was the use of a small blade about the size of a safety razor blade, fitted with a thick wooden handle at an angle something like that of a hoe and held against the revolving apple, this being easier to grasp by a man's hand than the handle of an ordinary paring knife. This rigging was first put on a low table or bench, with four legs, which the operator straddled. Such devices have the appearance of greater age. The table arrangement took up room—it was simplified and space saved by mounting the parer on a board. As the man's realm was in the barn, the board was

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Documentary Notes

Compiled by P. R. HOOPES.

V

A New Method of Making Bullet-Moulds

The Badness of the Bullet-Moulds brought into America for common Sale, and the Difficulty of meeting with one of them, bad as they are, that will fit one's Gun, will render the following Invention, for making (easily) true and exact Bullet-Moulds, agreeable to all Lovers of good Shooting.

First provide yourself with two Pieces of Lead about and Inch and half or two Inches square, and half as thick, and smooth their Faces, so that when joyn'd they may make near a Cube; then get some Marbles (such as Boys play with) from the smallest to the Size that fits your Gun, oyl or grease the Marbles and Lead well; and with the Assistance of a Smith's Vyce, with two flat Pieces of Iron in the Chaps of it, press the two Pieces of Lead with the smallest Marble between, till the Marble is quite sunk in the Lead; then put in the next greater, always remembering to keep the Lead and Marbles well oyl'd; do thus successively 'till you have brought it to the size you want: And to prevent the Bullets having Edges, smooth the Faces of the Mould, and press in the same Marble several Times, by which means you may make Moulds of wonderful Exactness. Then cut a Gate, and fit the Corners with Pins to keep the Pieces in a proper Position for Casting. When you use it, smoke it well, and take Care that the melted Lead be not so hot as to burn Paper.

(The General Magazine, Phila. Feb. 1741, p. 132)

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V. 3 no. 1-16219-24 VI
July 1964 *Mr. Jeremiah Brown's Method of making
Saltpetre; published in Virginia by Order
of the Trustees for the Improvement of Arts
and Manufactures . . .*

Saltpetre is to be found in tobacco houses, stables, cowhouses, hen and pigeon-houses, and in any covered place where the influence of the sun seldom reaches. A sixty-feet tobacco-house will yield upwards of 16 C. wt. a year, and so in proportion for larger or smaller houses.

In order to prepare the floors for attracting nitre, all dung and other trash must be removed; and if the floors are not level, they must be made so by laying a marble, or any soil not too stiff, which must be lightly trod down with their feet.

The floor being thus prepared, sprinkle strong ambeer over it, made from tobacco-trash, and cover it with wet-ground leaves, or other tobacco-trash, for a fortnight; then clean out the trash, and in any cool dry morning that succeeds, you will find on the floor the nitre attracted and condensed like hoar frost; sweep this off lightly, and put it by in some hogsheads, or safe place in your house, until you have leisure to go thro' the following process. This work you must carefully repeat as often as you observe the abovementioned appearance of nitre on your floors; by which means you will soon be furnished with a competent quantity to employ a leisure day.

The process. Make a lye from this earth in the same manner as is usually done for soap, noting that the earth is not to be hard packed on the straw in the bottom of your lye vessel, which would retain the water to be poured on it too long, and overcharge it with saline particles, to the great interruption of the process: place the earth hollow in the vessel for the reception of the water; the first put to it must be warmer than new milk from the cow; afterwards add cold water: fix a vessel to receive the lye as soon as you begin to put the water in, as it will not remain long upon the earth, but in a few minutes begin to drop into the receiver: If it runs foul, it must be returned upon the earth: As soon as it has dropped a gallon, you may begin to boil it in a cast-iron pot. Every bushel of earth will require near eight gallons of water. Continue to boil it gently until you have fully charged your pot with the lye, and you will find the watry particles evaporate until it is reduced to a thick oily consistence,

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Documentary Notes (Continued)

shooting into small icy crystals, which you will easily perceive by exposing the suds, in a spoon, to a cold place: Then put the liquor out of the pot into wetted wooden trays, and set it by in a cool place for the first growth: If you accidentally boil it too thick, add a little cold water: When your trays have stood with the suds a few hours, you must raise one end to let the lye drain off from the petre-salt, which is the first growth, and which, by boiling a second time, will yield you a fresh quantity.

After it is thus drained and become dry, you may put it into casks or tubs, until you have leisure, without prejudice to your crops, to refine.

To refine petre-salt. Put into your pot about a third of the quantity your pot will hold of this first growth, and set over the fire: You are to be provided with an iron rod, or poker, to stir it: As soon as it begins to melt, you will see it begin to boil furiously: Keep it well stirred down, as at this time it is very apt to take fire, which will destroy the whole: when you observe it in the boiling to look of a dirty white, slacken your fire, and stir it briskly for a quarter of an hour: then increase your fire, and continue the stirring, though the danger of burning it is now over: The pot, before it is sufficiently melted, will be, at the bottom, of a flaming red, and the matter will appear like boiled cream; and when it becomes whitish and liquid, pour it upon a stone, or some earthen vessel, or a hard well-rammed earthen floor, clean swept. As soon as it is cold, it will become hard, and if you throw it upon a stone, will ring like broken china.

If you have not leisure immediately to clarify it, put it into a tub in a dry place until some convenient opportunity.

To clarify coagulated cream of nitre. To every pound of this matter put six pounds of water, after you have broke it into small pieces: Put your pot upon the fire, and stir it until it is well dissolved: then make the fire all round the pot, which will cause it to boil in the middle, and prevent any waste by its drying and sticking on the sides of the pot; and as soon as the earthy matter begins to settle in the pot, pour the liquid into a tray, or other open vessel, that its sediment may settle: Pour off the clear liquor, and evaporate it with gentle fire, until in a spoon it will shoot into crystals; then pour it into your tray, with dry sticks fixed across, so as to be a little below the surface of the liquor; set this in a cool place, where it may stand until it shoots into clear transparent crystals; then pour off the liquor,

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Early American Industries

The Secret Joint Hinge

By RUDOLF HOMMEL

A close study of old houses in eastern Pennsylvania revealed that up to the period of the Revolutionary War door hinges were made of wrought iron. For inner and lighter doors we find the so-called H and L hinges, and for heavier and outer doors the strap hinges, which swung upon a hook driven into the door post.

Immediately after the Revolution, from 1783 on, there appeared suddenly the so-called butt hinges made of cast iron. By comparison they were small, folding together like a book. Screwed to the abutting edges of door and casing they were hidden from view, only the rounded joint of the two leaves showing when the door was closed. Quite a number of these cast iron butt hinges bear the inscription BALDWIN PATENT.

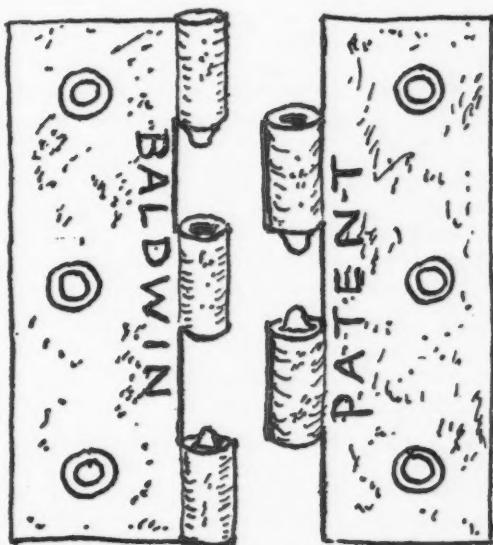
One may wonder what is patentable in a hinge which was well known for centuries made of wrought iron, brass or copper, but now made of cast iron. Some search has so far failed to find an American patent for a hinge assigned to a person with the name of Baldwin. If it should ever be found the description, no doubt, would disclose what the inventor claimed as new in his invention.

We did, however, find notice of an English patent for cast iron hinges. It is the British patent No. 1102, of October 3, 1775, assigned to Messrs. Izon and Whitehurst at Birmingham. The patentees called it an invention for making cast iron hinges with the secret joint. We have never seen a cast iron hinge which could be identified as made by Izon and Whitehurst. So we kept on wondering and searching for an explanation of the secret of the secret joint. Finally we ran across a book entitled "Birmingham and Midland Hardware District" edited by Sam. Timmins (London 1866). On page 103 we found mention of Izon and Whitehurst's patent of 1775 and an attempt to solve the mystery of the secret joint. "It will be well to explain," the text has it, "that this invention for casting hinges was for joining the two halves or flaps of the hinge in the casting instead of casting them separately, and fitting them together afterwards. The wire running through the two halves of the joint is surrounded by the cast metal and is entirely hidden, hence the name secret hinges."

Having gained this information, we scrutinized our Baldwin Patent hinges and found that neither on

top nor on the bottom of the joint is there any hole where a pin could have been inserted around which the two leaves of the hinge would revolve. The evidence seemed now conclusive that our cast iron hinges, marked Baldwin Patent must be the type which were patented by Izon and Whitehurst in 1775. It could well be that one Baldwin marketed here in the States, legally or otherwise, the cast iron hinges with the secret joint, under his name, and that the word Patent referred to the original English patent.

Now we should have been satisfied that we finally understood the secret joint of the cast iron hinge, patented in England in 1775, used extensively in the budding United States as the Baldwin Patent, and finally explained in the Birmingham account of 1866. Whether we accept this explanation or not, there is no doubt that it was a first rate hinge and has lasted for many generations in our parts.

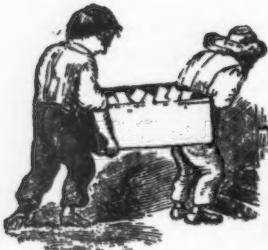


Sketch revealing the Secret
of the Secret Joint Hinge.

We have a Baldwin Patent hinge on a cupboard door and it has served faithfully now for a century and a half and for the same length of time has guarded its secret. And one day it broke down. There was no pin or wire at all imbedded in the metal. The two leaves of the hinge were held to-

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The Chronicle



The Chronicle

issued occasionally for members of
**EARLY AMERICAN
INDUSTRIES ASS'N**

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

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Communications regarding the contents of The Chronicle should be addressed to the Editor; Suggestions for members and other matters either to the President or the Secretary-Treasurer.

MEMBERSHIP: Beginning January, 1945, regular membership will be \$2.00.

Supporting Members contribute \$5.00 or more a year.

BACK NUMBERS of The Chronicle are available in some instances for fifty cents or one dollar, depending on rarity. The Index to Volume I is available for one dollar.

With Volume III the Chronicle assumes a new dress. There are several reasons for this. Many of our active members had complained that the larger size was difficult to file: to mail it safely had always presented a problem. The present format, therefore, is slightly smaller. An even littler size was considered but this, which is nearly the same as standard letter head paper, was selected for convenience in mailing and filing. Large sheets of paper we found can also be cut to this size without waste.

It allows us also to use a readable type with economy. We are using old style type, 10 point on 12. Our first two volumes were also printed in Caslon Oldstyle. We used a coated paper so half-tones as well as line cuts could be used with the text. The dull finish paper now in use is easier on the eyes but limits us to line cuts. When the use of half-

tones seems advisable we will therefore insert a special sheet as we have in this issue.

When a new format seemed advisable we consulted John J. Corell, one of our older members who makes a specialty of collecting old type fonts and printers fancy dashes. To him we are indebted for our streamer heading and for the quaint cut we use on our masthead.

Documentary Notes we hope are here to stay as we are counting on them heavily to maintain the new schedule we have set for ourself. Perhaps we are rash to say so but we hope to see the Chronicle issued quarterly, and regularly. We cannot always guarantee a fat number for as you know the Editor has always been a pleader for more articles. It's his constant chant. Hereafter if we have only sufficient copy for a four page issue, so it will be—as we hope to make a virtue of regularity!

Chronicles sent to the following have been returned and we are unable to reach them. If any of our members can help us in supplying the missing addresses we would appreciate it.

Stephen Biggs, 1214; Prof. E. R. Gross, 831; Frederick Hill, 1373; Mrs. Lawrence Hunter, 322; Mrs. John Mahoney, 1255; Mrs. L. N. Nicolls, 957; Mrs. Mary S. D. Roberts, 1233; Diana Sakelos, 1365; Albert Sarfer, 1221; Miss L. Shepherd, 1277; Mrs. C. Arthur Slater, 1161.

The Secret Joint Hinge (Continued)

gether in quite a different way which fully justified it having been patented.

The accompanying sketch reveals that the cylindrical knuckles which revolve one on the other have a domed projection which fits into a cup-shaped recess of the adjoining piece. The process of manufacture, no doubt, was first to cast one leaf of the hinge, and then take this finished piece and place it in the mold for the companion piece and pour the hot metal so that the second piece became locked to the first one. The rapid chilling of cast iron poured into a mold and up against a cold piece of cast iron imbedded therein, of course prevented the hot metal from fusing to the cold one.

Of further interest is the observation that here in this hinge with the secret joint, we find the nucleus of the idea of the joint in the "zipper." Of course, in the cast iron hinge the joints are solidified, as it were, but, after all, who wants to "unzip" a hinge.

Early American Industries

Documentary Notes (Continued)

and set the tray so as to drain it off perfectly dry.

Thus your salt petre is completely made, and in a few days will be dry enough to remove out of your trays into casks or vessels proportioned to the quantity.

The liquor you last poured off must be again evaporated over the fire, for it will yield salt-petre equally good as the former; and thus continue the operation, until all the watry particles are totally evaporated.

N. B. The earth from which you have extracted the salt-petre, and all the washings of your vessels, if you lay it by thinly spread, in your house, will turn to profit, as it continues to be peculiarly proper to attract and absorb the nitre floating in the air; add also the earthy matter which settles in the refining: and should you be in want of house room, you may spread it upon the earth, covered in the manner that fodder stacks are: It will produce salt-petre full as well as a tobacco house, taking care that the north end be always open, and that it be defended as much as possible from rain.

(The London Magazine, London. Oct. 1763, pp. 535-536)

VII

An Excellent Method of making Gun-Powder.

Having for many months been sensibly affected with the great disadvantage the colonies labour under for want of ammunition, I thought it my duty to apply myself to the attainment of those necessary arts of making Salt-petre, and Gun-powder; and having far exceeded my expectations in both manufactures, I think myself still farther obliged to communicate the so much needed knowledge to my country at large. My first trial was on Salt-petre, two pounds of which my son has extracted from six bushels of stable dirt, perfectly fit for making Gunpowder. This was done by the method of Dr. Young and Mr. Rubsaman, lately published by the former, for which, and many other useful informations, I take this opportunity to return those gentlemen my public thanks.

I have lately erected a Powder-Mill in the south end of Ulster county, in the province of New-York, at which I have made as good Powder as I have ever seen, and will bear the inspection of good judges, in the following manner:

Gunpowder is composed of nothing more than the four plain simple articles, Saltpetre, Brimstone,

Charcoal and Water. The three first of which are to be made as fine as possible, as as to be sifted through a gauze sieve, or fine boult, as fine as common flour. But it being difficult to make the Salt-petre all fine, those parts that will not be easily got through the sieve, must be dissolved in soft warm water, then let the Sulphur, Saltpetre, and Charcoal, be each separately weighed. Take of the Saltpetre an hundred weight, of the Sulphur fifteen pounds, and Charcoal eighteen pounds, and in that proportion for any greater or smaller quantity. This being done, mix them all well together in some large vessel, such as a potash or any other kettle, and when well mixed, moisten the whole with the aforesaid nitrous water, till it is as moist as dough for making bread. Then put an equal quantity in each mortar, and pound it well for at least twenty hours; and if the mill runs slowly, let it run twenty four hours; and as the paste by pounding will naturally grow dry, it must be kept moist by putting in a little of said water, and when pounded sufficiently take it out of the mortar, and put it in some tub, or any other proper vessel. As to the graining, it must be done in the following manner, viz. Have a box made about five feet square, the sides eighteen inches deep, the bottom tight, and top entirely open; fix across the box two rods or laths near the middle, about four inches below the top, and about ten inches apart, then have six sieves made of wooden splits, in the same manner as a wheat riddle, but much finer, the coarsest should be as fine as a cockle sieve, or little finer, and so each sieve to increase in fineness till the last is as fine as possible. I believe it were best to make the two coarsest of wire; then take about a quart of the paste, put it into the coarsest sieve, set the sieves on the two rods that are fixed across the box, then work the sieve with a circular motion, which will press the paste through the sieve in large and unshapely grains, and when a considerable quantity is passed through, then sift it over again in the next coarsest sieve, and so till the grains are fine enough. The last sieve must be so fine, that whatever passes through it, will be too fine for Powder, and is to be worked over the next bath. As the paste will naturally roll together in large round balls, when worked in the sieve, a board must be made near as large in circumference as a common pewter plate, and about one inch thick on the center, declining to the edge, of some hard wood turned in a lath, and as smooth as possible. This board must be put into the sieve among the paste,

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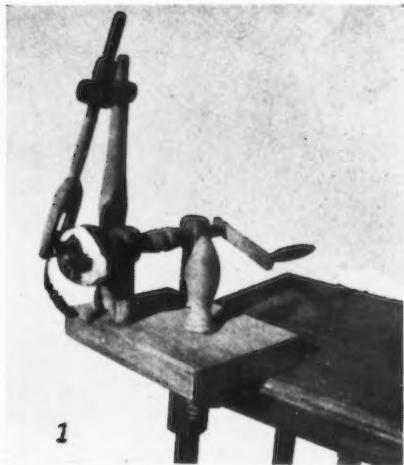
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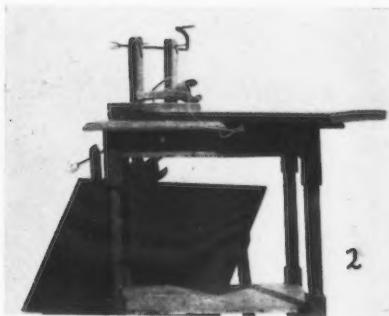
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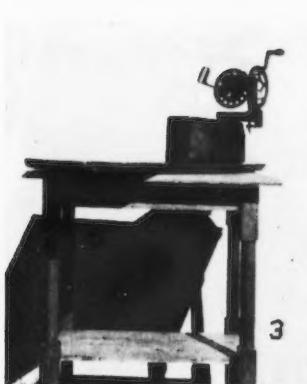
Apple Parers



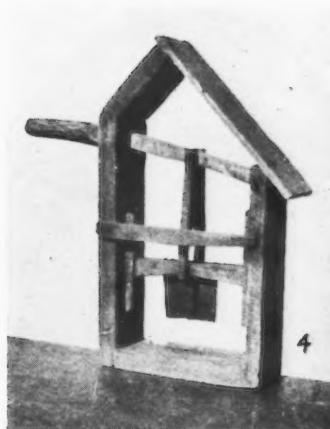
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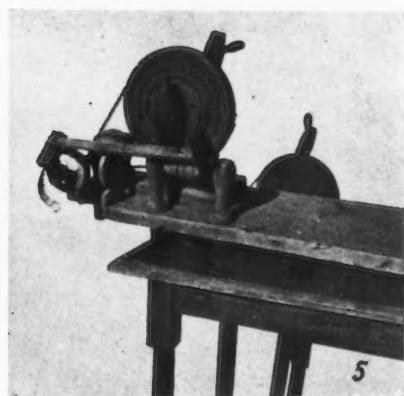
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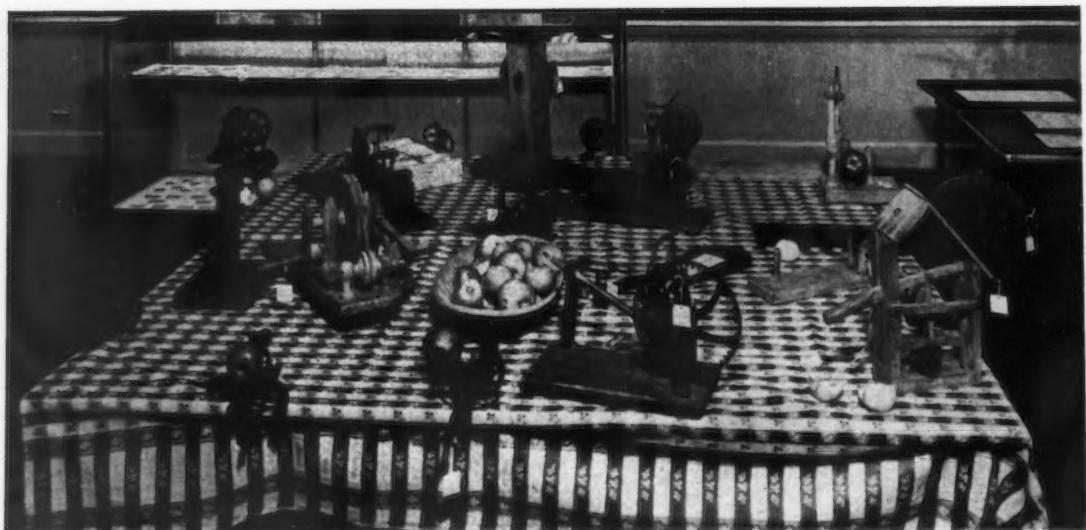


4



5

1. First patented commercial parer.
2. Primitive hand wrought shaft with handle to hold blade.
3. Table iron parer mounted on straddle board like wooden ones.
4. Primitive splitter with corer in center of knife.
5. Commercial parer with paring blade automatically pressed against apple.



APPLE PARERS

General assortment of more recent parers in the author's collection showing changes from wood to iron.

Early American Industries

Dried Applesauce (Continued)

made long enough to be placed on a milking stool or an old chair and held steady by sitting upon it. More speed was obtained by using a large turning wheel connected by a gear with the shaft holding the fork. One of the first used was the device (in reverse) that the Dutch used on their windmills. It was a wooden wheel about a foot in diameter with a rim of pegs which meshed with a pinion on the shaft holding the fork. This rather clumsy contraption seems to have been in general use but it was soon superceded by a more simple method—a larger sized power wheel with a belt of raw-hide turning a smaller wheel on the fork shaft. Further developments hung the paring handle from a gallows-like frame, perpendicularly over the apple, to be guided by the hand as the apple was peeled. The final design in wooden parers was apparently a slender strip of wood with the hoe-like parer in the end, fastened to the base or straddle-board horizontally and parallel, so that the spring of the slender strip held the paring blade against the apple. This was guided by hand over the rounded surface of the apple being made to revolve by the other hand. A wooden parer of this order was the first to be patented July 24, 1847 (Bullock & Benson No. 5197). Later Patents being for iron parers.

Wooden parers, like many other implements, were made on the farm in primitive form and have interesting varieties of construction with occasional ingenious samples of hand-forged parts. Some had small parts taken from other devices, such as spinning wheel knobs, shafts and bearings. I have one with a curved seat board reinforced by an old sickle blade. Others were made demountable and, to save space, were taken apart during the long period of time from one dried apple season to another.

By a little practice a man could easily keep up with and exceed the output of a woman. From this beginning started a large industry in the manufacture of iron parers for which there were issued 100 patents in the United States Patent Office. There were a few odd combinations, one being "For pressing beefsteak, paring apples and sharpening knives". These patents do not include those for modern machines that are used in processing apples. With the apple parers I picked up an unusual primitive device for coring and cutting an apple in half. It resembles a small guillotine in a frame made of wood with hand forged nails. A knife with a 4 inch blade has a tube in its center, sharpened at the lower end and

operated by a pump handle which by pushing downward, in one motion cores and splits the pared apple. So far as I can find, this gadget is the first apple corer in existence. That it has been much used is evinced by the deep stains of apple juice—it apparently is about 200 years old.

I know of no other implement developed to such a large extent, that has so completely passed out of our daily lives. Hardly one person in 100 has ever heard of an apple-parer. Dried apples gave way to a factory product processed by evaporation. Apple filling for pies then came in cans and now we have them dehydrated. The collection of both wooden and iron parers furnishes an opportunity for an interesting study of the resourcefulness and ingenuity of our forefathers.

N.B.:

In the village of Antrim, New Hampshire, a Company has made Apple Parers for more than sixty years. With the addition of modern appliances it has grown into a sizable business.

Documentary Notes (Continued)

which breaks the lumps in pieces, and the paste through the sieve.

When the Powder is well grained in the manner directed, it must be rolled in a barrel, the inside of which is to be made as smooth as conveniently may be, with as small a door cut in one side, capable of being shut tight, and the barrel to be fixed so as to be turned by the shaft of the mill. Put in a few pounds at a time, and let it be rolled as above, which will make the Powder smooth; then sift it in the finest sieve, till the fine parts that work off in the barrel pass through the sieve, which is to be returned again into the mortar. The Powder must be put in flat trays or dishes, and set by to dry either in a small room kept warm with a large stove, or, if the weather be dry, in the shining of the sun.

I therefore most heartily recommend to the good people of this continent to enter into these necessary businesses with spirit, being well assured, that a greater quantity may with ease, be made than will be needed for our own consumption, even admitting the times to be worse than the threats of the British administration would lead us to expect.

Any person inclining to build a Powder-mill will be shewn a plan, with directions for the construction of all its parts and utensils, by applying to their very humble servant.

Henry Wisner.

(Essays upon the making of Salt-Petre and Gun-Powder. New-York: Printed by Samuel Loudon. M.DCC.LXXVI. pp. 36-39)

The Chronicle

Communications

Meadow Haying—Addenda
FROM J. ALMUS RUSSELL

FLAG-ROOT CANDY

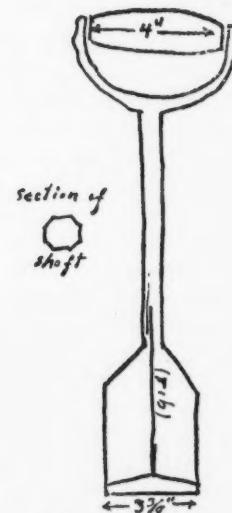
To two cups of sliced flag-root, take a syrup made from two cups of sugar and $\frac{3}{4}$ cup cold water. Bring to the boiling point. Simmer three hours. Then boil hard until syrup is about boiled away. Remove from the fire. Set the dish in a pan of *hot* water. Stir until the sugar crystallizes on the slices.

During the haying season father never forgot to fetch along with us a couple of jugs of "sweetened water" which we always drank in great quantities without suffering the unpleasant after effects of hard cider or ice water. In our attic, I once discovered a miniature wooden keg, (bung-hole in the top side), of a gallon capacity, with leather straps by which it could be hung like a modern camera. Such switchell-jugs are now museum pieces, and were used long before my time; but earthen jugs kept the mixture cooler and cleaner.

On our arrival in the meadow, father would cut a little green hay and throw it over the jug with the idea that the evaporation from the hay would add to the coolness of the container. I never remember that father measured the exact quantity of ingredients, but the following is a satisfactory recipe for *Sweetened Water (or Switchell)*

4 quarts cold spring water
1 cup molasses
1 cup vinegar
1 teaspoon ginger
1 cup brown sugar (corn syrup to taste may be substituted).
1 tablespoon oatmeal
Stir all of the ingredients together with a big wooden spoon, and pour into a clean jug.

In my article on "Meadow Haying" I attempted to show just how we did it with the rather primitive farm tools we had on hand. Years later when we were tearing down some of the out-buildings, we had an auction. Among the implements we sold was a handmade wooden winnowing-mill which a local man purchased for a quarter. Being of an ingenious sort he sent a picture of the "mill" to Henry Ford who later bought it. You may now see it in his museum at Greenfield Village.



From HERBERT T. SHANNON:

A friend picked up for me the chisel shown in the rough drawing. It was purchased in Jamestown, N. Y. I have a collection of over four thousand tools but I am unable to identify this chisel. My reference books don't even give me a lead.—Any help will be appreciated.

The tool is a wooden handled steel chisel made by O. I. Stefford. It is $27\frac{3}{4}$ " in length overall. The blade is $8\frac{1}{4}$ " long. Its thickness through the center rib is about $\frac{5}{16}$ " and the blade, at the outer edge, $\frac{1}{16}$ ". The shaft, as is shown in section, is octagonal.

From H. MADDOX:

I have several old boilers. One or two I would like some information on if possible. One of them is a cylinder type $24"$ in diameter approximately 25 feet long with a dome in the center both ends, also the dome top of cast iron. The boiler plate is in sheets about 30 to 36" wide of iron, not steel, all hand riveted.

Another is $36"$ in diameter 14 feet long. It has cast iron heads with the flange turned out and at one time it had an inner flue possibly 16 or $17"$ in diameter, that was $6"$ from the bottom of the flue to the bottom of the boiler. It is possible that this flue played out, they then made some cast iron manhead arrangement with a crow foot on the outside to close the holes where the tube was. This is an iron boiler, also hand riveted. It has a cast iron round top dome that has a very ancient safety valve arrangement.

These are not strictly Early American Industry tools though they are certainly related.

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